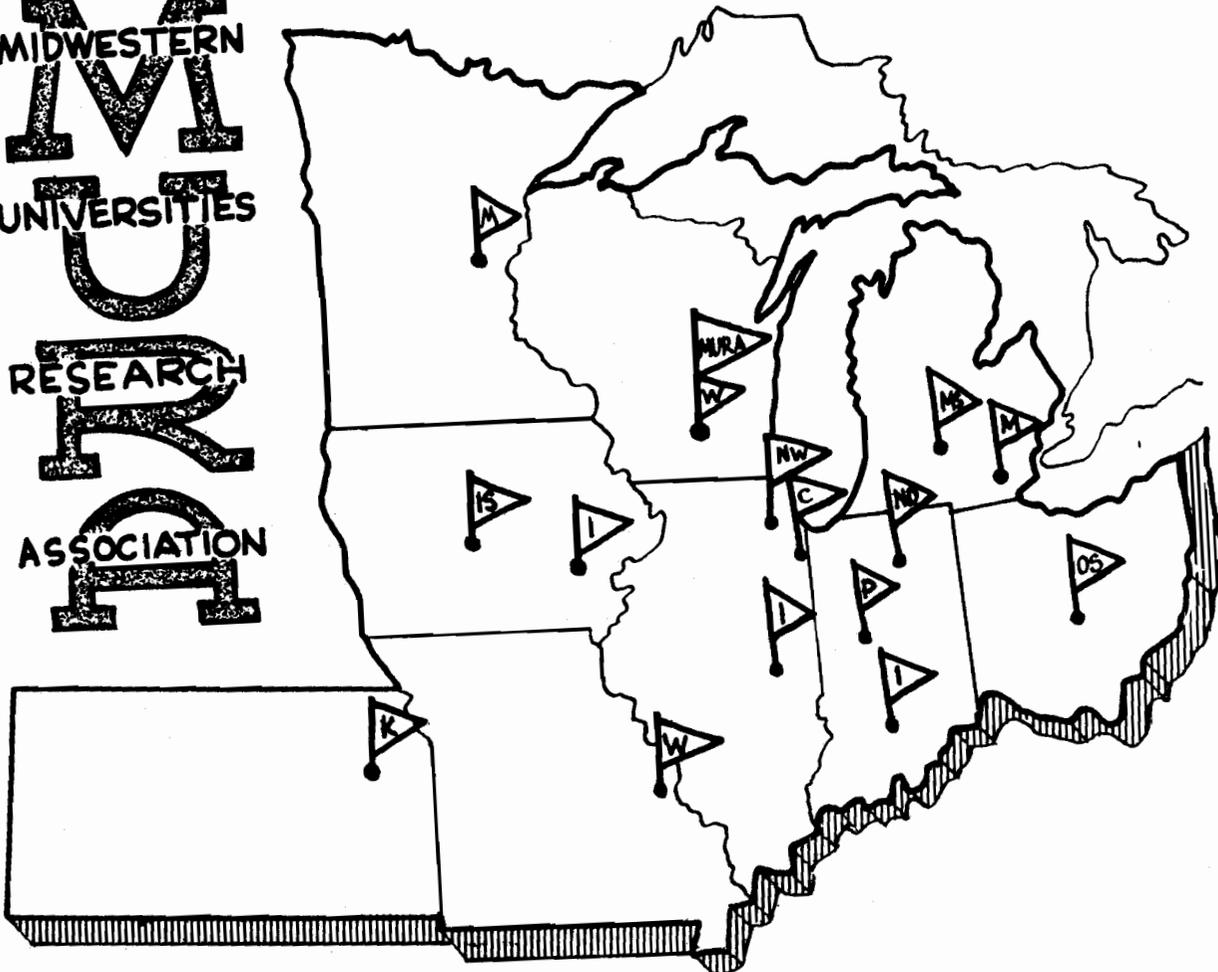




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**REPORT** EQUICYL SCOPE  
(PROGRAMME 118)  
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## EQUICYL SCOPE - PROGRAMME 118

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This programme allows the display and automatic plotting of the equipotential surfaces calculated by the well-known Equicyl (Programme 54) whose previously prepared and distributed description should be consulted at this juncture.

All of the equipotential curves of a given series will be plotted on a single film frame, thus allowing a whole set of equipotentials to be placed on one graph. If it is desired to have but one curve on a frame. The Agendum Sheet should be clearly marked "Use Frame Advance Overwrite". Only the first frame of such a series will display an ID Number.

The aforementioned frame will have no axes, but will be labelled in the extreme upper right hand corner with the Programme Number (118). To the left of this will be the Programme Number which produced the potential deck used. To the left of this will be the Mesh Number of the potential deck used.

The ordinate extends from zero at the bottom of the frame to  $y_{SF}$  at the top of the frame. All points to be plotted must have ordinates less than  $y_{SF}$ , else they will run off the top edge and appear from the bottom edge, thereby contributing to the confusion of the user. The abscissa is the quantity

$$A = rx + s \left( \frac{N\theta}{2\pi} \right)$$

and is scaled so that the full width of the scope is  $A_{SF}$ .  $A = 0$  is represented by both the left and right edges of the frame, i. e. points for which  $A > 0$  are plotted to the right from the left hand edge; points for which  $A < 0$  are plotted to the left from the right hand edge. Confusing overlap or a wasteful gap could occur if  $A_{SF}$  were not intelligently chosen.  $r$ ,  $s$ ,  $A_{SF}$ , and  $y_{SF}$  are to be entered on the EQUICYL SCOPE AGENDUM SHEET, a sample copy of which is attached. Note that no scope display will be made unless Sense Switch 5 be down.

Both equipotential points and boundary points (including current points) are displayed, the former by dim points, the latter by bright points. (Recall that the IBM Corporation has achieved the production of two intensities on their cathode ray tube display unit.) As in the standard EQUICYL as many as eight points of a given equipotential curve may lie at and be plotted at the same abscissa. As many as four boundary points (plus current points) may lie at and be plotted at the same abscissa. If there are more than four, the lower four will be treated. The standard printing format of EQUICYL has been augmented to print the coordinates of these boundary points. Any abscissa having a boundary point (or points) (or current point or points) will have the standard line (or two lines) of print followed by a single line of four columns containing the ordinates of the (up to) four boundary points. Unused positions will read zero, and the line will be identified by the integer llll.

The combined limit on mesh points and current points allowed in FOROCYL and EQUICYL must here be given up and the separate limits

$$a(b-1) \leq 7344$$

$$N_c \leq 100$$

must be observed. As used above the words "current point" pertain to either a point at which a CC value has been entered in FOROCYL or an  $\mathcal{S}_{ij}$  value has been entered in EQUICYL. A point which has either of these quantities entered at it but not both will be found and plotted.  $N_c$  stands for the greater of the number of CC points of FOROCYL or the  $\mathcal{S}_{ij}$  points of EQUICYL.

If it is desired to magnify the vertical scale so that  $y_{SF}$  is less than the maximum  $y$  to be plotted and it is desired to suppress the confusing modular plotting any  $y > y_{SF}$  then plainly mark the EQUICYL SCOPE AGENDUM SHEET in the place provided.

**EQUICYL SCOPE AGENDUM SHEET  
PROGRAMME 118**

To be firmly attached to the front of a series of Equicyl Agendum Sheets when the scope display feature is desired.

Sense Switch 5 must be down, otherwise no scope display will be made.

Fractions

Parameter	Address	Value	12R
r	259		PARAMETER
s	260		PARAMETER
A <sub>SF</sub>	261		PARAMETER
y <sub>SF</sub>	262		PARAMETER

Check to use "Frame Advance Overwrite"	
Check to use "Magnify Scale and Suppress Overflow Overwrite"	